Debt Structuring Options for Managing Liabilities

THE BOND BUYER Presents

1991-2005 CALIFORNIA PUBLIC FINANCE CONFERENCE

September 21-23, 2005

La Costa Resort and Spa • Carlsbad, CA

Presented by:

CITY OF SAN JOSE

CAPITAL OF SILICON VALLEY

BONDLOGISTIX LLC

INSIGHT. INNOVATION. INTEGRATION.

September 21, 2005

Panel Members

- ***Jose Cisneros***
  - *Treasurer Tax Collector*
  - City and County of San Francisco
- ***George Majors***
  - *Managing Director*
  - Bond Logistix, LLC
- ***Julia Cooper***
  - *Deputy Finance Director*
  - City of San Jose

Presentation Outline

Section 1	Asset / Liability Management Basics
Section 2	Utilizing Variable Rate Debt
Section 3	Optimizing Investment Portfolio Linked to Variable Rate Debt
Section 4	Practical Aspects of Utilizing Variable Rate Debt – City of San Jose Profile

Managing To "Net Interest Expense"

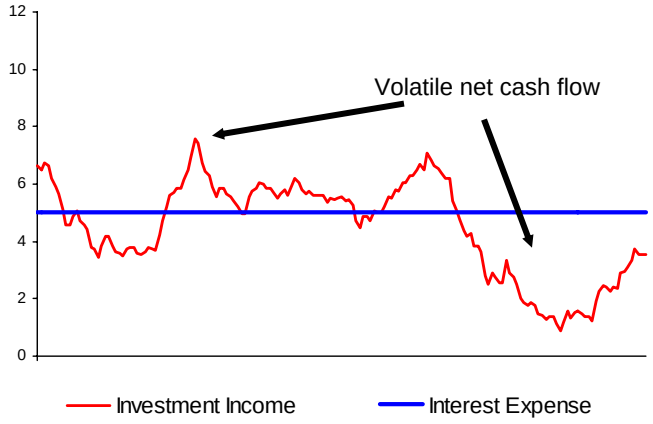
- **Status Quo characterized by long-term, fixed-rate debt and relatively short-term assets.**
- **Status Quo can lead to volatile cash flows from financial activities:**
  - **Risk of poor interest rate margins impacting budget**
  - **Unnecessarily high interest expense, low investment income**
  - **Difficulty in budgeting and meeting goals**
- **By focusing on "Net Investment Income" the Issuer can expect to increase net economics while simultaneously reducing existing exposure to interest rate risk.**

– Net Interest Expense ("NIE") is the difference between the interest expense incurred on debt-type obligations and interest income earned on investments

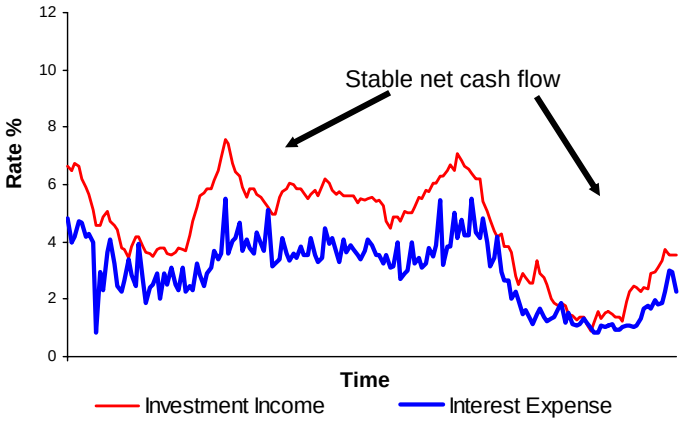
– It is Net Interest Expense, rather than either (a) debt expense or (b) interest income alone that impacts the budgetary bottom line

– Objective is to integrate debt and investment strategies toward minimizing both the absolute level of NIE and volatility in NIE

ALL FIXED RATE DEBT



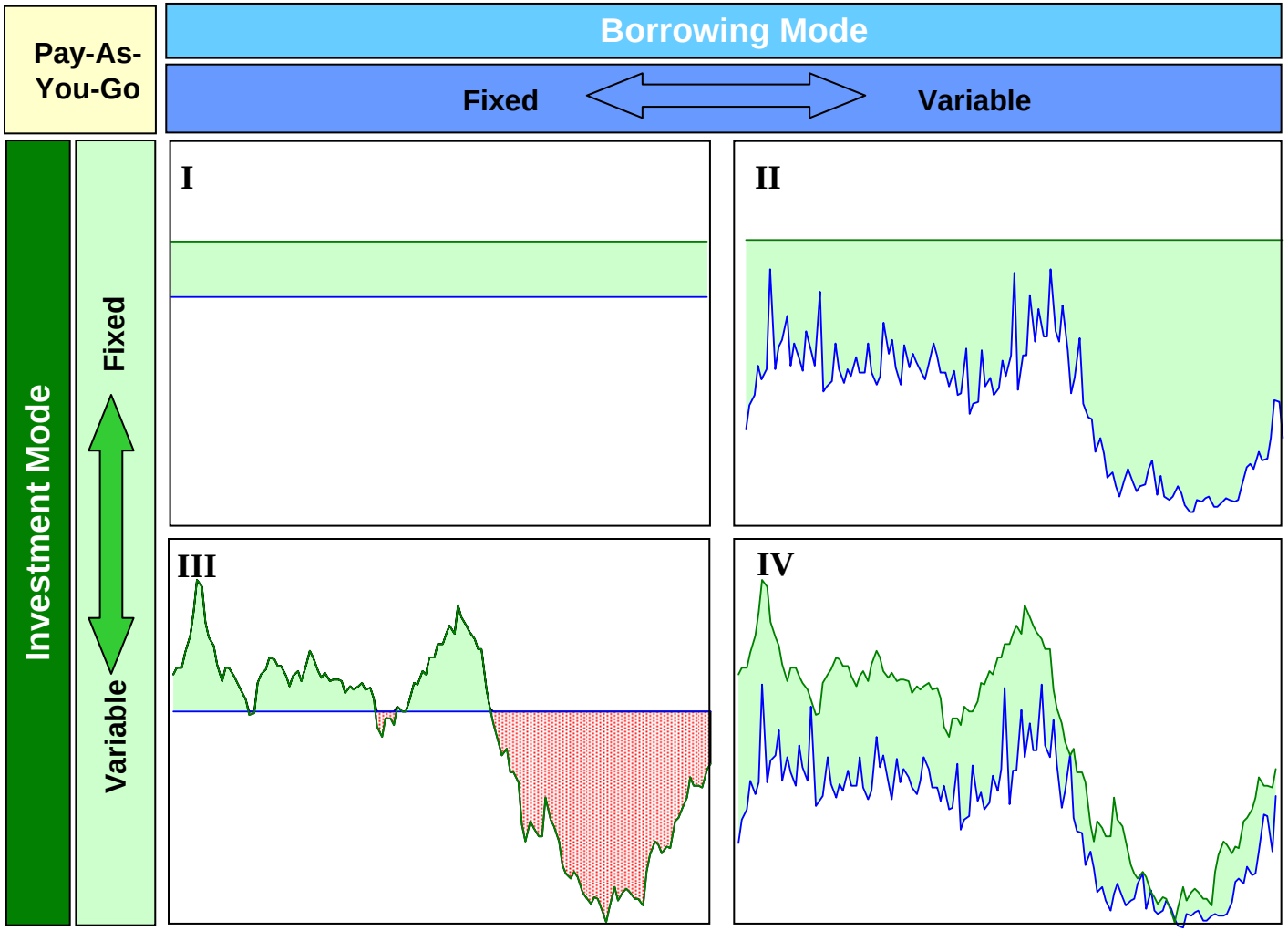
HEDGED POSITION



Variable rate debt can reduce balance sheet risk.

Capital Funding Alternatives

- Quadrants I and II call for long-term, fixed rate investments which, generally, are not practical alternatives
- Quadrant III depicts the most common capital structure among State and Local Governments
- Quadrant IV, has provided the most consistent NIE results.
- Assumptions:
  - Fixed Borrowing 5.00%
  - Fixed Investment 6.084%
  - Variable Borrowing BMA
  - Variable Invest 18-month Agency less 20 bps.



Historical Net Interest Expense Comparison

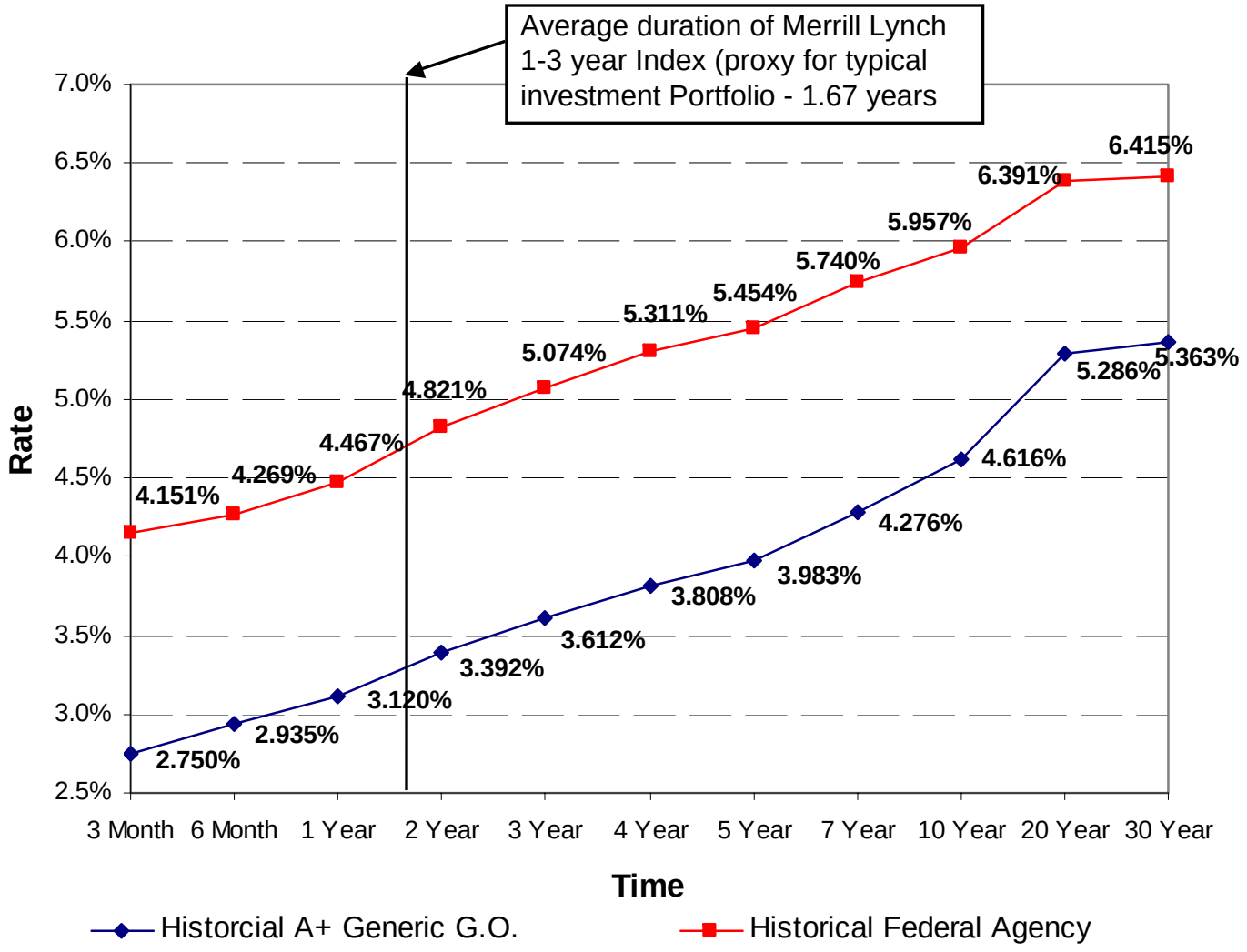
- **Recent years have been among the worst for tax-exempt borrowers seeking to maximize predictable Net Interest Expense ("NIE")**
- **Issuers with little or no variable rate debt have seen investment income reduced drastically without offsetting reductions in interest expense**
- **Variable rate issuers were much better positioned, but still saw declines in NIE as investment income declined more than debt costs**
- **Net effect of long liabilities and shorter assets is significant (a) adverse economic exposure to low interest rates and (b) volatility in Net Interest Expense**

Calendar Year	Invest @ 18Mo Agency -20 [3]	Borrow @ Fixed (%)[1,2]	Fixed Rate NIE ($)	Borrow @ BMA (%) [4]	Floating Rate NIE ($)	Floating Rate Benefit ($)
1991	5.99	5.00	990,556	4.30	1,688,556	698,000
1992	4.29	5.00	(714,167)	2.81	1,480,173	2,194,340
1993	3.68	5.00	(1,318,333)	2.37	1,313,205	2,631,538
1994	5.66	5.00	657,083	2.84	2,814,006	2,156,923
1995	5.99	5.00	989,583	3.85	2,144,199	1,154,615
1996	5.64	5.00	636,250	3.43	2,203,365	1,567,115
1997	5.76	5.00	760,417	3.66	2,102,492	1,342,075
1998	5.20	5.00	200,000	3.43	1,769,038	1,569,038
1999	5.50	5.00	497,917	3.29	2,204,071	1,706,154
2000	6.44	5.00	1,441,667	4.12	2,321,282	879,615
2001	3.74	5.00	(1,261,667)	2.61	1,128,526	2,390,192
2002	2.29	5.00	(2,713,883)	1.38	909,386	3,623,269
2003	1.35	5.00	(3,651,296)	1.03	314,365	3,965,660
2004	2.15	5.00	(2,848,400)	1.23	917,177	3,765,577
2005	3.58	5.00	(1,417,619)	2.26	1,323,150	2,740,769
Total			**(7,751,892)**		**24,632,991**	**32,384,883**

Assumptions
1. $100 million in principal
2. 5% fixed rate is a proxy for long-term borrowing rates
3. 18-month Agency rates less 20 bps is proxy for short-term taxable asset return
4. BMA is proxy for tax-exempt short-term borrowing cost

Shortening Liabilities vs. Extending Assets

- **Due to liquidity needs and other management objectives, asset durations are generally limited to less than 5 years**
- **Accordingly, there is a significantly greater benefit to addressing the asset/liability mismatch by reducing the liability duration**
- **The tax-exempt curve is steeper due primarily to the tax risks associated with owning long-term municipal bonds**
- **Increased income by extending from 6 to 20 months = 0.430%**
- **Decreased expense by shortening from 10 Years to 1 week = 1.86%**



Historical Costs and Cyclical Lows

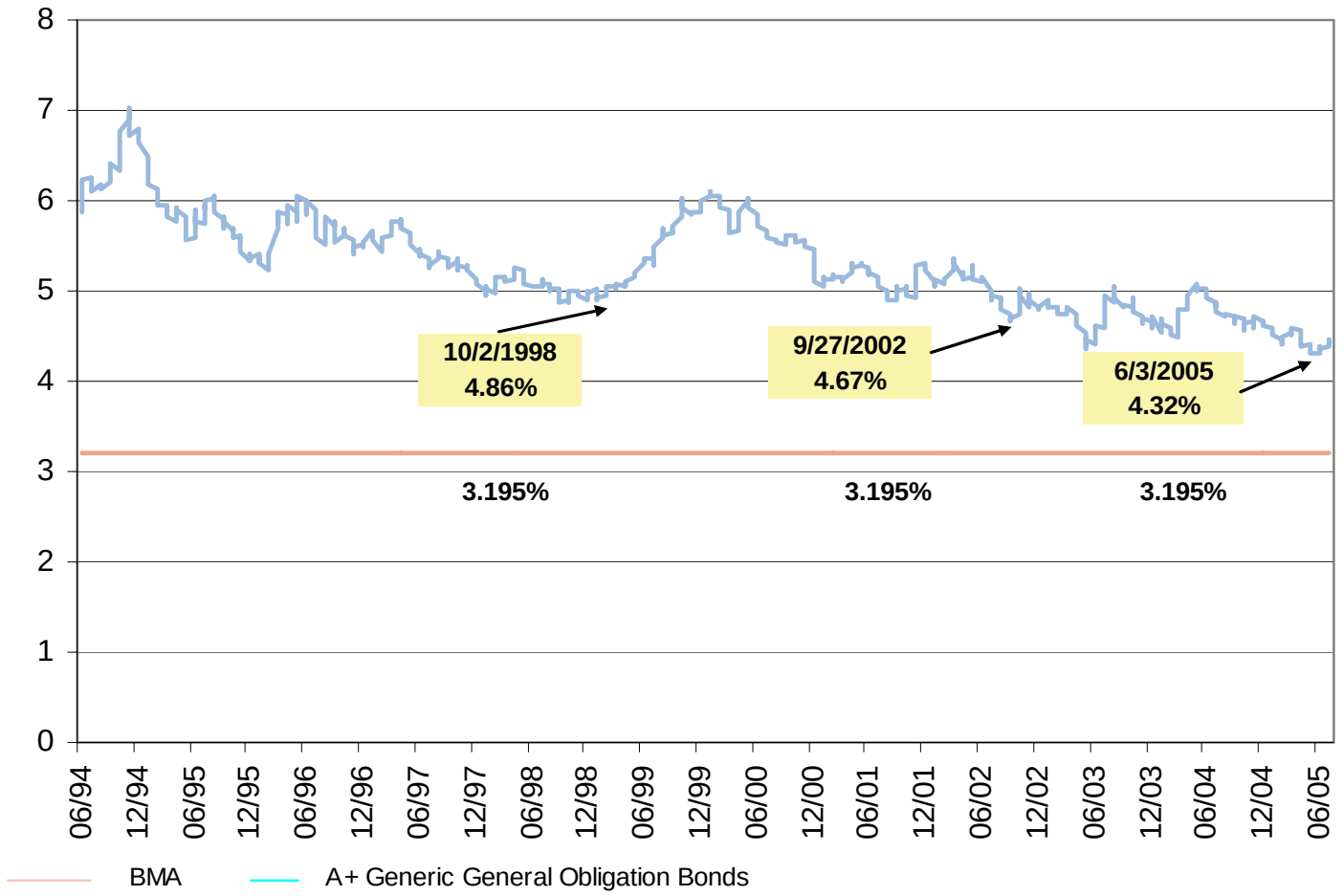
– **While reducing NIE volatility is the primary objective, historically, variable rate debt costs have been lower than even the lowest fixed rates**

Historical Averages

Period	20 Year A+ Generic G.O. Bond	Floating Costs	Spread
11 Years	5.286%	2.795%	2.491%

Date	Spot 20 Year A+ Generic G.O.	Floating Rate Since	Diff
10/02/1998	4.860%	2.713%	2.147%
09/27/2002	4.670%	1.791%	2.879%
06/03/2005	4.320%	2.730%	1.590%

Historical Cost Comparison
Long Term vs. Short Term Debt Issuance



Notes
1. Assumes Spread to historical BMA of 40 bps to cover associated costs such as remarketing, auction agent, and insurance

Overview of Variable Rate Financing Vehicles

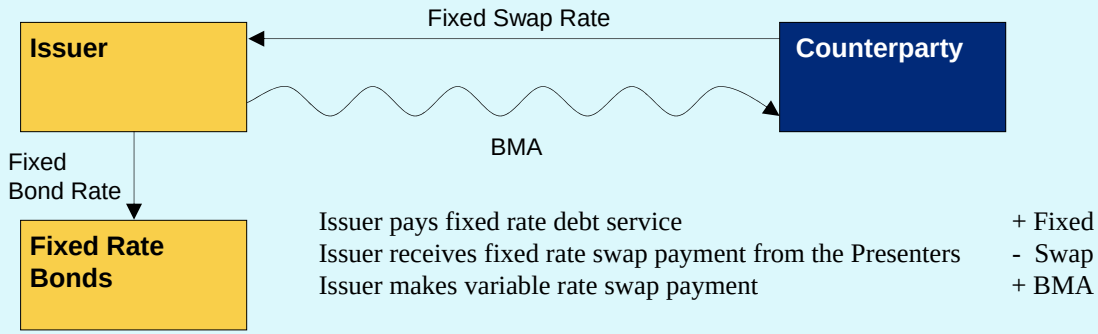
- Issue additional floating rate debt
- Refinance existing fixed rate debt with floating rate debt when existing debt becomes subject to optional redemption
- Execute fixed receiver interest rate swap

Product	Interest Rate Risk	Tax Risk	Credit Risk	"Put" Risk	Bank Facility/ Cost Risk	Counterparty Risk	Auction Risk
Multi-Modal Variable Rate Demand Bonds (VRDBs)	☑	☑	☑	☑	☑		
Auction Rate Notes (ARNs)	☑	☑					☑
"Synthetic" Variable Rate Bonds	☑	☑		☑		☑	

Swaps As Duration Management Tools

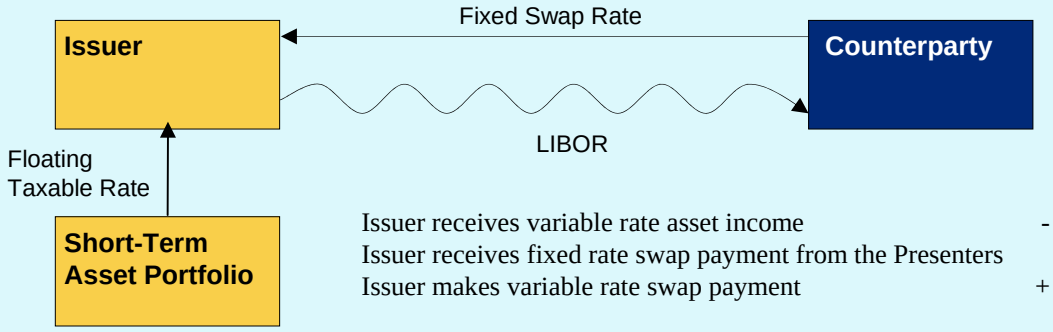
- **In conjunction with contemplated or currently outstanding fixed rate debt, creates so-called "Synthetic" Floating-Rate Debt**
- **Under certain market conditions and/or issuer circumstances, can offer significant advantages relative to "natural" floating rate alternatives**
- **Can be used to extend duration of asset balances when purchase of longer-term fixed-income assets is not an available or otherwise attractive option**
- **Economics and mechanics identical to synthetic floating rate debt application**

"Synthetic" Floating Rate Debt Application



Issuer pays fixed rate debt service	+ Fixed
Issuer receives fixed rate swap payment from the Presenters	- Swap
Issuer makes variable rate swap payment	+ BMA
Issuer's net synthetic variable rate payment	= BMA+(Fixed-Swap)

"Asset Swap" Application



Issuer receives variable rate asset income	- LIBOR
Issuer receives fixed rate swap payment from the Presenters	- Swap
Issuer makes variable rate swap payment	+ LIBOR
Issuer's net investment income =	Swap

Short Duration Strategy

Common Terminology

- **Repricing Risk:** The risk that arises when assets and liabilities are repricing at different time intervals
- **Asset Sensitive:** Portfolio with assets repricing earlier than liabilities (Reinvestment rate risk)
- **Liability Sensitive:** Liabilities repricing earlier than assets (market price and interest rate risk)
- **Basis Risk:** Risk that arises from changes in the relationship between interest rates for different market sectors (i.e. taxable & tax-exempt)

- Duration of asset portfolio is shortened to hedge against floating rate debt exposure (i.e., BMA Index)
  - Matching of asset and liability duration reduces exposure to repricing risk
  - Establish target duration and acceptable degree of duration mismatch
  - As interest rates decline, reduced interest income is off-set by reduced borrowing costs
  - As interest rates rise, higher borrowing costs are off-set by greater investment income
  - Provides high degree of near-term budgetary predictability (i.e. Net Interest Expense)

Sample Short Duration Portfolio

Average Maturity Less Than 180 Days

Management Considerations

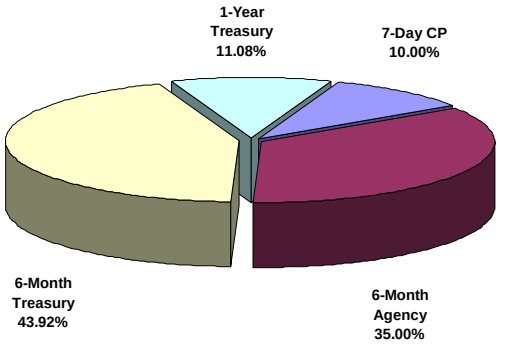
- By establishing management constraints and operating parameters, an optimal portfolio can be established which maximizes the expected spread between the asset portfolio and variable rate tax-exempt interest costs (BMA).
- For example, subject to the following portfolio constraints;
  1) Average maturity <=180 days
  2) Portfolio/BMA Correlation =.90
  3) Treasuries >= 35%
  4) Agencies <= 35%
  5) Commercial Paper<= 10%,

  The following portfolio results in the greatest expected spread to BMA

Optimization Results

Portfolio Allocation	Original Value	Optimal Value
Portfolio Weights: 7-Day CP	0.00%	10.00%
Portfolio Weights: 1-Month CP	0.00%	0.00%
Portfolio Weights: 3-Month Agency	0.00%	0.00%
Portfolio Weights: 6-Month Agency	0.00%	35.00%
Portfolio Weights: 3-Month Treasury	0.00%	0.00%
Portfolio Weights: 6-Month Treasury	0.00%	43.92%
Portfolio Weights: 1-Year Treasury	0.00%	11.08%
Portfolio Weights: 1-Year Agency	0.00%	0.00%
Portfolio Weights: 2-Year Treasury	0.00%	0.00%
Portfolio Weights: 2-Year Agency	0.00%	0.00%
Portfolio Weights: 3-Year Treasury	0.00%	0.00%
Portfolio Weights: 3-Year Agency	0.00%	0.00%

Sample "Optimal" Allocation



Historical Yield & Spread Analysis (1991 to present)

	Current Yield	Average Yield	Stdev (Yield)	Correlation to BMA	Spread to BMA	Stdev (Spread)	Maturity (Years)
BMA Index	2.36%	3.00%	1.18%	1.00	-	-	0.00
7-Day CP	3.27%	4.13%	1.75%	0.91	1.13%	0.83%	0.00
1-Month CP	3.27%	4.09%	1.73%	0.91	1.09%	0.81%	0.08
3-Month Treasury	3.12%	3.88%	1.64%	0.90	0.88%	0.77%	0.25
6-Month Treasury	3.33%	4.04%	1.67%	0.90	1.04%	0.80%	0.49
1-Year Treasury	3.53%	4.30%	1.74%	0.89	1.30%	0.88%	1.00
2-Year Treasury	3.64%	4.66%	1.63%	0.87	1.66%	0.84%	2.00
3-Year Treasury	3.64%	4.94%	1.49%	0.84	1.95%	0.80%	3.00
3-Month Agency	3.40%	4.11%	1.74%	0.90	1.11%	0.85%	0.25
6-Month Agency	3.65%	4.24%	1.76%	0.90	1.24%	0.86%	0.49
1-Year Agency	3.79%	4.46%	1.76%	0.89	1.46%	0.89%	1.00
2-Year Agency	3.84%	4.88%	1.61%	0.87	1.88%	0.83%	2.00
3-Year Agency	3.85%	5.18%	1.48%	0.85	2.18%	0.79%	3.00
Sample "Optimal" Portfolio	**3.46%**	**4.14%**	**1.72%**	**0.90**	**1.15%**	**0.83%**	**0.50**

Intermediate Duration Strategy

Common Terminology

- **Scenario Analysis:** Simulation of several different interest rate scenarios (flattening, inverted, steepening, parallel shift, etc) and the effect on assets and liabilities
- **Book Value Perspective:** Perceives risk in terms of it's effect on accounting and earnings.
- **Market Value Perspective:** Perceives risk in terms of it's effect on the market value of a portfolio

- Duration of asset portfolio may be extended in effort to maximize expected spread to variable rate debt costs
  - Longer duration portfolio may generate greater expected spread over time
  - Less near-term budgetary predictability due to repricing risk that results from duration mismatch
  - Establish acceptable degree of duration mismatch
  - Manage portfolio duration and structure to capitalize on relative value opportunities and manage risks
  - Must consider tolerance for unrealized losses (market price risk)
  - Scenario analysis and stress testing can help quantify exposure

Sample Intermediate Duration Portfolio

Average Maturity Less Than 1.5 Years

Management Considerations

- Repricng risk associated with extending portfolio duration can be managed by establishing additional structural constraints for the portfolio.

- For example, subject to the following portfolio constraints;

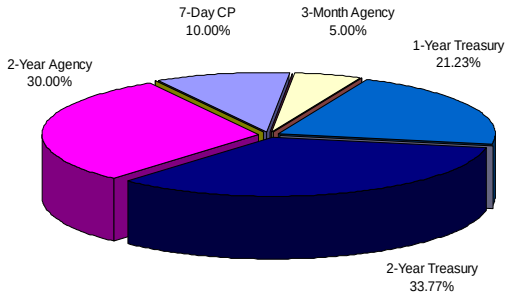
1) Average maturity <=1.5 Years
2) Portfolio/BMA Correlation =.85
3) Treasuries >= 35%
4) Agencies <= 35%
5) Commercial Paper<= 10%
6) At least 15% w/in 3 months
7) At least 35% w/ in 12 months
8) At least 30% w/in 12-24 months

The following portfolio results in the greatest expected spread to BMA

Optimization Results

Portfolio Allocation	Original Value	Optimal Value
Portfolio Weights: 7-Day CP	0.00%	10.00%
Portfolio Weights: 1-Month CP	0.00%	0.00%
Portfolio Weights: 3-Month Agency	0.00%	5.00%
Portfolio Weights: 6-Month Agency	0.00%	0.00%
Portfolio Weights: 3-Month Treasury	0.00%	0.00%
Portfolio Weights: 6-Month Treasury	0.00%	0.00%
Portfolio Weights: 1-Year Treasury	0.00%	21.23%
Portfolio Weights: 1-Year Agency	0.00%	0.00%
Portfolio Weights: 2-Year Treasury	0.00%	33.77%
Portfolio Weights: 2-Year Agency	0.00%	30.00%
Portfolio Weights: 3-Year Treasury	0.00%	0.00%
Portfolio Weights: 3-Year Agency	0.00%	0.00%

Sample "Optimal" Allocation



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1-Month CP	3.27%	4.09%	1.73%	0.91	1.09%	0.81%	0.08
3-Month Treasury	3.12%	3.88%	1.64%	0.90	0.88%	0.77%	0.25
6-Month Treasury	3.33%	4.04%	1.67%	0.90	1.04%	0.80%	0.49
1-Year Treasury	3.53%	4.30%	1.74%	0.89	1.30%	0.88%	1.00
2-Year Treasury	3.64%	4.66%	1.63%	0.87	1.66%	0.84%	2.00
3-Year Treasury	3.64%	4.94%	1.49%	0.84	1.95%	0.80%	3.00
3-Month Agency	3.40%	4.11%	1.74%	0.90	1.11%	0.85%	0.25
6-Month Agency	3.65%	4.24%	1.76%	0.90	1.24%	0.86%	0.49
1-Year Agency	3.79%	4.46%	1.76%	0.89	1.46%	0.89%	1.00
2-Year Agency	3.84%	4.88%	1.61%	0.87	1.88%	0.83%	2.00
3-Year Agency	3.85%	5.18%	1.48%	0.85	2.18%	0.79%	3.00
Sample "Optimal" Portfolio	**3.63%**	**4.57%**	**1.66%**	**0.88**	**1.57%**	**0.85%**	**1.50**

Tools Available to Assist Issuers

- Government Finance Officers Association Recommended Practices
  - "Using Variable Rate Debt Instruments"
  - "Use of Debt-Related Derivative Products and Development of a Derivatives Policy"
- Develop and adopt Debt Policies which provided guidance on the use of variable rate debt
- Develop models and methodologies for budgeting variable rate debt

Challenges to Utilizing Variable Debt

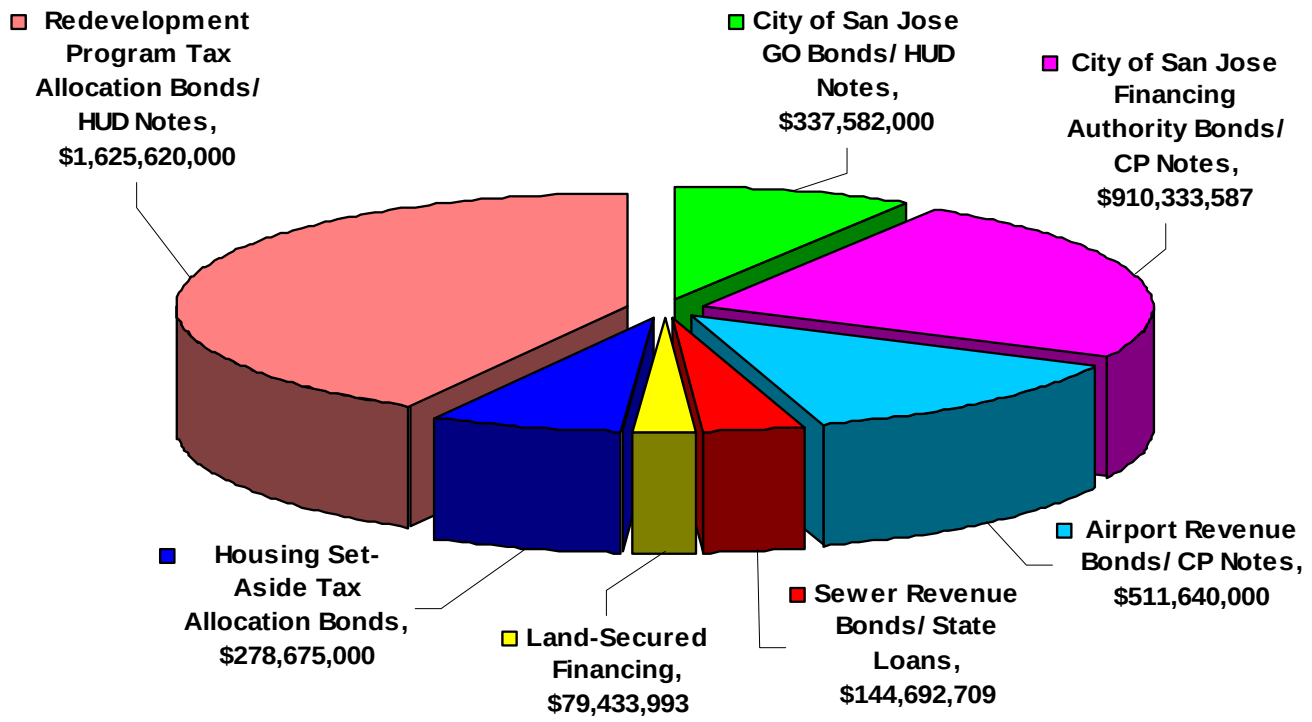
- **Even when completely hedged with off-setting assets, variable rate debt can create new risks.**
- **Variable rate debt imposes new administrative and accounting requirements.**

- Budgetary Risk – How to appropriately budget for annual debt service payments
- "Accounting" for interest expense and investment income at enterprise level
  - Departure from "project-specific" or "line-item" accounting
  - Exposure to "Out-of-context" criticism
- Identifying and evaluating new risks
  - Tax reform risk
  - Credit enhancement and liquidity facility renewal risk
  - If using swaps, counterparty and basis risk
- Governing body education

City of San Jose Variable Rate Debt Experiences

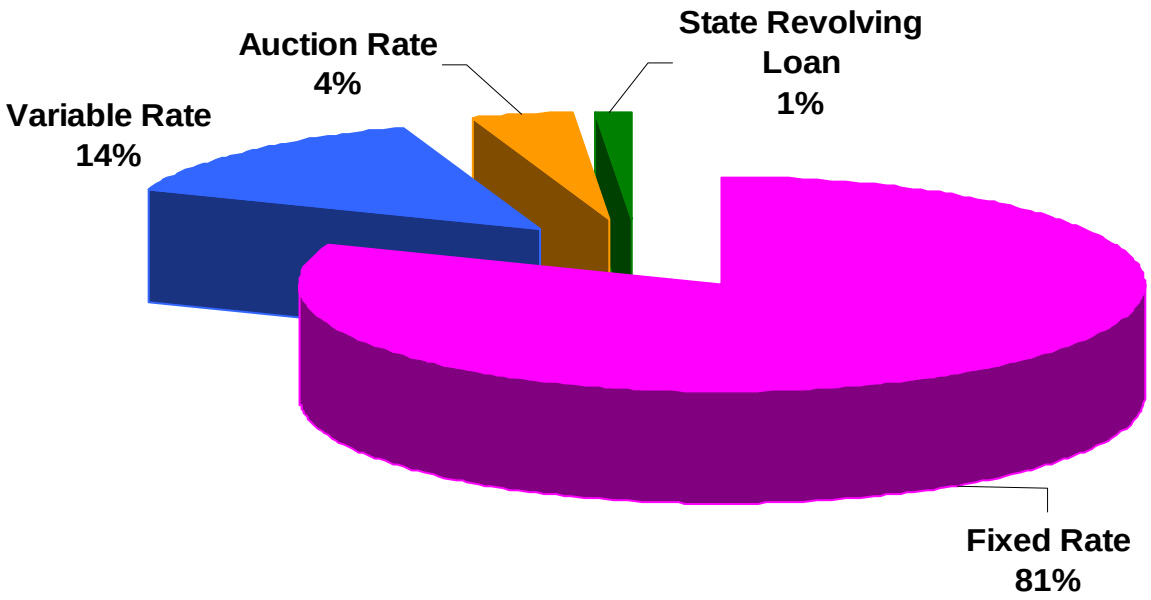
- Total Debt Portfolio for City and all related entities is $3.89 Billion as of June 30, 2005
  - $530,345,000 in variable rate/commercial paper outstanding
  - $149,225,000 in auction rate outstanding
  - $52,657,709 in State Revolving Fund Loan
  - Approximately 18.8% of total portfolio
- Consists of multitude of products
  - Variable Rate – tax-exempt and taxable
  - Commercial Paper – tax-exempt and taxable
  - Auction Rate – tax-exempt and taxable
  - State Revolving Loans
- No swaps – No Derivatives Policy

City of San Jose Debt Composition



Outstanding Debt -- $3,887,977,289
as of June 30, 2005

City of San Jose Debt Composition

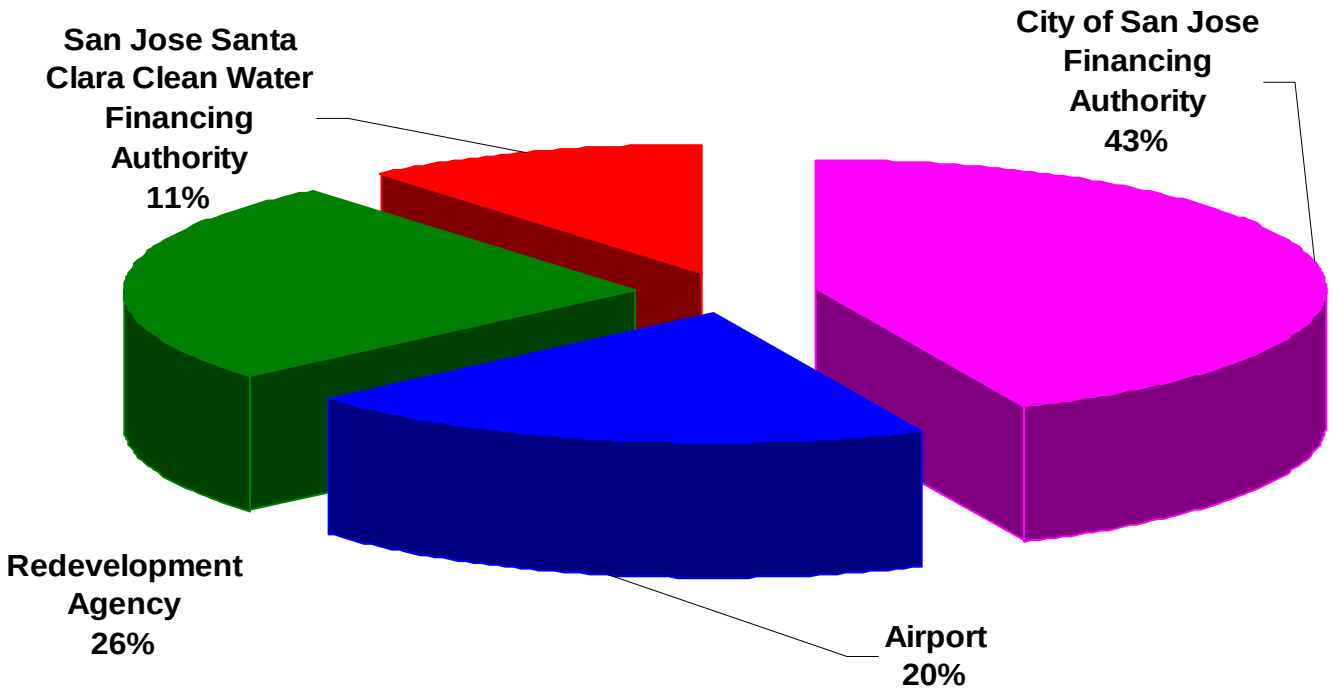


Total Debt Portfolio by Debt Type
as of June 30, 2005

City of San Jose Variable Rate Debt Experiences

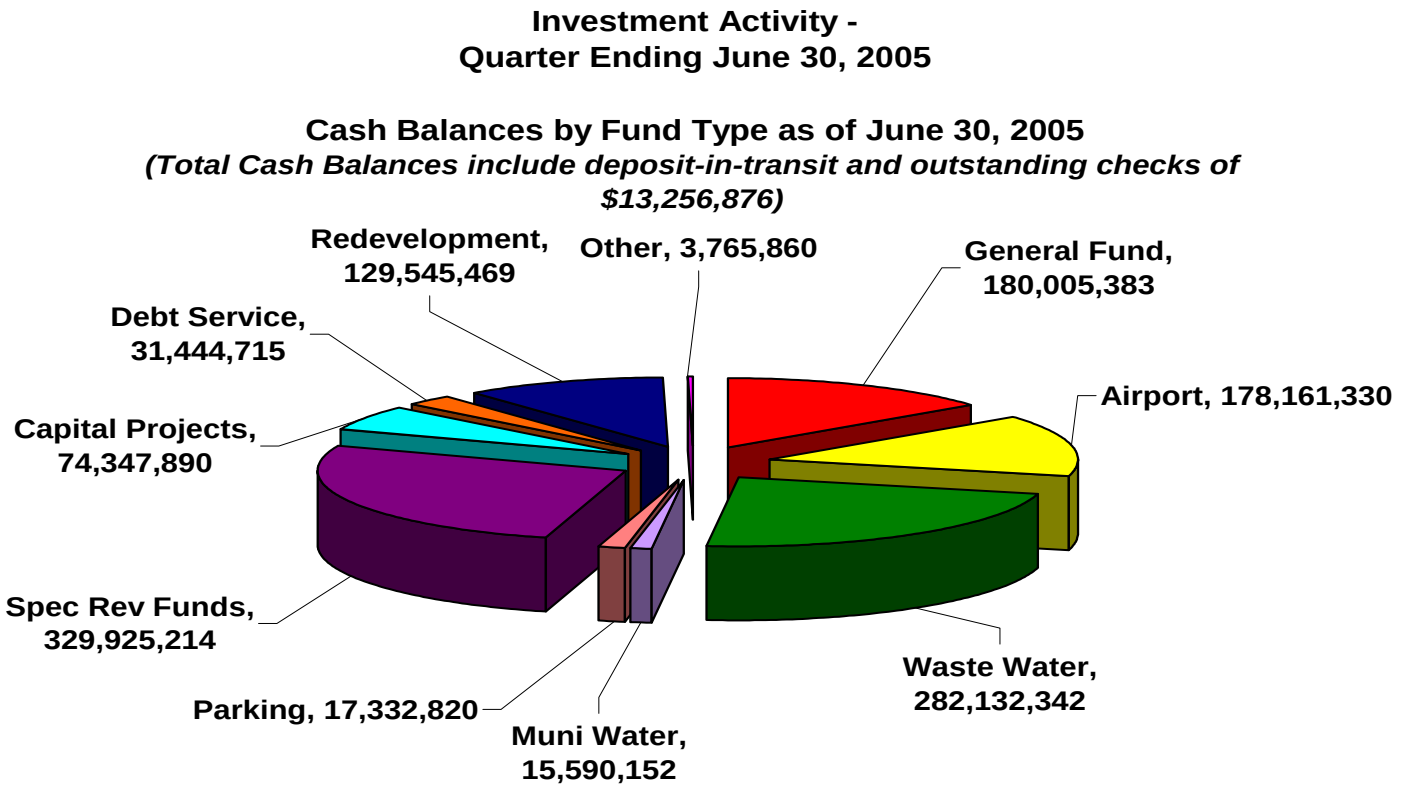
- Use of variable rate debt is generally part of overall capital financing planning, especially with large capital programs
  - City of San Jose Financing Authority -- $317.445 million
  - Airport -- $147.755 million; $140 million Auction Rate Bonds; balance in commercial paper notes
  - Clean Water Financing Authority -- $26.7 million in VRDOs and $52.6 million in State Revolving Fund Loans
  - Redevelopment Agency -- $187.67 million in both 80% and 20% housing set-aside programs

City of San Jose Variable Rate Debt Composition



Total Variable Rate Debt Outstanding -- $732,227,709 as of June 30, 2005

City of San Jose Investment Portfolio Composition By Fund Type as of June 30, 2005



City of San Jose Variable Rate Debt Experiences

- Situations where use of variable rate debt is preferred
  - Change in use of asset financed
  - Create flexibility in asset management
  - Management of overall cost of capital
  - Short-term /Interim financing vehicle

City of San Jose Variable Rate Debt Experiences

- First entrance into Variable Rate market in 1995 with the issuance of taxable Lease Revenue Bonds to finance the improvements to a conference center in which City had entered into a Lease Agreement with private operator
  - Several educational sessions with the Council Committee and City Council
  - Elected to purchase an interest rate cap for taxable debt at 300 basis points above then current market
  - Agreement with Operator set their payments at fixed rate; City assumed all variable rate risk

Variable Rate Challenge – How to Budget?

- Objective: minimize programmatic impact by making a reasonable interest rate assumption
- Annual debt service = principal x interest rate
  - Future interest rates are unknown for variable rate debt
- Assume average rate in effect through next budget period
- Assume too high: decrease budgetary resources available for other purposes
- Assume too low: diverts resources from other purposes late in the year at fixed rate; City assumed all variable rate risk

Variable Rate Challenge – How to Budget?

- Historical and Current Interest Rates are useful for "Rule of Thumb" estimation
  - Compare current rates to historical ranges
  - Identify current trends
  - Establish how rapidly rates have moved up or down
- Understanding the Fed's Objectives and Policy Drivers Helps Refine Estimate
- Finance Industry Analysis and Projections Serve to Validate Estimates (or not)

Variable Rate Challenge – How to Budget?

- Remember looking for average rate over the budget year, not "spot rate" on particular day

- Funds Rate is the "Touchstone" for budgeting variable rate debt

  – LIBOR is benchmark for pricing taxable rates
    - Taxable Municipals price from LIBOR

  – BMA is the benchmark for tax-exempt rates
    - BMA represented as percentage of LIBOR

Variable Rate Challenge – How to Budget?

- It's all about the Fed Funds Rate
- Read, read, read … what are the various economists saying and predicting regarding short-term rates
- Keep database of rates
  - Fed Funds
  - LIBOR
  - BMA
  - Your Agency's variable rate debt performance

Summary – Variable Rate Good Idea?

- Variable rate debt is wonderful asset management tool for the right issuer for the right purposes
  - Reduction in overall cost of capital
  - Maintenance of future flexibility for change in use and change in outstanding debt
  - Provides flexibility to restructure debt in future
- More time consuming to manage – must be active in daily management
- Requires more skilled staff
- Budgetary Risk ever present
- Not a tool for every issuer